

DEREK J. PRICE

*The Scientific Humanities:
an Urgent Program*



IN ANCIENT GREECE, when the great growing-tip of civilization was the concept of Democracy, there were two classes of people, those who were actively involved in the movement and those who were not. The participants were those who held or could hold public office; the others, disinclined to such office by nature or nurture, were *idiotes*. The word proved useful and its meaning was extended from those ignorant of politics to those ignorant of the other aspects of civilized life as well. They were *idiots*.

Now, without implying that Democracy is one iota less important today and without over-glorifying Science, I should like to suggest that Science has largely replaced Democracy as the growing-tip of civilization. Certainly science and technology have become the most active sector in our national deployment of manpower and intellectual capital. But at the same time that we have become thus extensively engaged to the benefits and woes engendered by science, we have bred amongst us a new class of *idiots*, a class without participation in or appreciation of this force which is driving humanity. I shall indicate why this has come about and why it is not only unfortunate but highly dangerous. I shall further show that there may be a solution which is pleasantly attractive to humanistic scholars and profitable for industry and government.

There are, I think, two main reasons why the new *idiocy* has arisen, one involving the content of science and the other its form. In content the barriers of technique—especially those of higher mathematics and intricate experiment—have tended to make science a closed shop. Last year I sat at High Table at a Cambridge college and heard an eminent classicist claim

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in a voice tending to pride that he knew nothing of physics and mathematics. With the shade of Newton so near I could not help imagining a scholar of, say 1750, claiming a similar *idiocy* of Greek, Latin, and the Bible. His arrogance would have been ill-received, marking him as unlearned and ungentlemanly to the point of expulsion.

I shall anticipate by remarking that this barrier is an unnecessary relic of an age when the research front of science was only one jump distant from the schoolroom. Until a generation ago a youth could learn quadratic equations and the elements of calculus and consider that this was what mathematicians did on a higher level. He could do Boyle's Law, dissect a frog, perform an inorganic analysis, and get the feeling that this, on a grander scale, was the life of the experimental scientist. There is today virtually no truth in such a claim and it is time we dropped the pretence. America once led the world by inventing and instituting the system of training in science by means of laboratory instruction rather than by demonstration. That leadership could be re-affirmed by excising laboratories and all non-utilitarian mathematics from the syllabus of schools, replacing them by a wider view of science, past and present. The intending specialist would not be hurt; he can either fend for himself or be helped by special colleges. In any event, the tendency in England, if not here, seems to be for the first year at University to be spent in un-teaching and re-teaching the basic groundwork.

MORE DANGEROUS than the technical content of science is its cumulative form. Original work in the humanities may be likened to photographing small sections from the pattern of a giant kaleidoscope; the pattern changes but each man sees different reflections and combinations formed from the basic elements. In the sciences, however, each worker adds a brick or pebble to a growing pile. From time to time the structure settles down or pieces landslide away to leave it more regular, but in the main, one has to place one's brick on top of those that have gone before.

This is a very essential difference. All kaleidoscope pictures have on the average the same content of humanism. But the reach of science is measured by the height of the pyramid, and to double this reach you must multiply the number of bricks eightfold—the cube of two. The metaphor is both exact and frightening. An accurate numerical analysis shows that over the last three centuries at least, the reach of science and of the humanities—indeed of all human achievement—has, roughly speaking, been growing so as to double (with compound interest, geometrical progression, exponential

growth) in the course of each successive generation. Since the crude size of science behaves as the cube of its reach, the crude doubling of size occurs three times in a generation—so increasing eightfold. I need not remark on the runaway characteristic of such unchecked compound interest. In three centuries science has grown from the first few of everything to the order of millions. In the same interval of time the humanities have increased by less than hundreds, though perhaps achieving the same relative result.

I must emphasize this: every measure of the size of science shows that it doubles in a period of about ten to fifteen years, and it has been doing so for so long that we have come to think of it as natural and indeed essential for our intellectual, economic, industrial, and military well-being. This rate of growth applies to the size of scientific libraries, to man-power, to expenditure, to bulk of literature, and probably to intensity of specialization. It cannot continue lest there be more scientists than heads of population. I wish I could present a full statistical analysis, but take my word for it that within the next ten or fifteen years either something cataclysmic must happen or the situation will become quite untenable.

However distasteful be this hypothesis, in all its vagueness, I should like the reader to consider it as an explanation of the present social and internal diseases of science, and also as sounding a warning of dangers that must be faced. The greatest danger, as I see it, is that it has been no man's professional business to talk about science in this way. Who should suggest that a similar tapering off in growth occurred in medieval institutions of learning and saw them break and decay significantly before the new learning of the Renaissance got under way? Who should analyze the troubled arguments that led successively to the literary forms of the learned journal, the specialist journal, and the abstract? Who will take a historical perspective of the popular picture of the scientist as a man-in-the-laboratory and show that the public laboratory is but a recent and obviously evanescent feature in the evolution of science?

Each of these enquiries is fundamental to a current problem about science, concerning it in the large rather than in detail. Just as financiers do not write about economics and politicians usually make history rather than write it, so scientists are not ordinarily especially competent or concerned to examine science-in-the-large. A few such people, however—scientists and historians mainly, but also some philosophers and sociologists—turned to this field. My grievous complaint against them is that they take it as something too small, too esoteric and specialized. Their scholarly standing is of the

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highest, but for them and for their universities such a subject as History of Science has a status and part similar to Egyptology or the study of Dante—a legitimate but narrow speciality.

Mention of my colleagues by name would be invidious. Suffice it to note the excellent professional historians of science now working at Harvard and M.I.T., at Cornell and at the University of Wisconsin, as well as my colleagues at the Smithsonian Institution. They all have the finest and highest of scholarly attitudes toward their research. I agree with them to the hilt and hope to show that their work is intensely interesting and intellectually rewarding; I also hope to show that it is a wide open and almost neglected field for humanists.

Before going further, let me explain my disagreement with the attitude toward these studies which is found in persons at all these places. They have the "egyptology attitude," which assumes that the intellectual integrity of pursuing an esoteric subject is sufficient justification for their choice of career and their acceptance of the bread-and-butter chores of giving more or less popular "orientation courses" to students in science and history, raising a few (very few) Ph.D. graduates, and running a museum.

I FEEL STRONGLY that while they do a good and essential job, they have missed a golden opportunity to serve not only their own subject but the wider field of learning as well; they have failed to shoulder a national responsibility that must eventually be thrust upon them. It is not entirely their fault: the universities have been hospitable but not visionary; industry and government have been too busy with the frantic alleviation of symptoms to pay much attention to the disease. Above all, most of the humanists have failed to recognize the child newly arrived among them and fast reaching maturity. Some of them indeed, fearing the techniques of science, would cast the baby out with the bathwater and become the modern *idiots*.

The child I refer to may be called the Scientific Humanities. Included in that term is the history of science, its philosophy, and all the rest that goes into talking about science rather than doing it. It includes many things which are not within the professional purview of the scientist at the research front or of his teacher—such as wide surveys of scientific theory and studies in the organization of technology.

Before the work of such men as George Sarton, Lynn Thorndike and Otto Neugebauer, it might have been claimed (and it often was) that these Scientific Humanities were only talk about scholarship, not scholarship itself.

Few would make this charge today; instead, many now maintain that the field entails recondite and special techniques for which one must have had scientific and other training. This is a fallacy which I want to expose by some personal examples.

I have already spoken of the statistical investigations of the exponential growth of science. It is the sort of thing that scientists often talk about and that ex-scientist-administrators of science have to use in their jobs. It is vital to government planning. Yet, because it might involve technical expertise, it has been left alone by the humanists. Having done some of this work myself I feel confident that there is much in it for which the training of the statistician, the sociologist, or the economist is more apposite than anything but a general "talking-about" knowledge of science.

If this seems rather a fabricated case, let me cite another from a more traditional form of scholarship. Five years ago I had the good fortune to discover a fourteenth century Middle English manuscript in a college library in Cambridge. I have since edited it and tentatively identified it as a hitherto unknown scientific work by Geoffrey Chaucer—a companion to his *Treatise on the Astrolabe* and the only manuscript in our first poet's own handwriting. Now I admit that to make a critical edition I had to have a knowledge of elementary mathematics and an understanding of medieval astronomical theory. I had also to learn palaeography *ab initio*, revive a small training in Middle English acquired through the caprice of a teacher in high school, and, most fortunately, find a good linguistic collaborator in Professor R. M. Wilson of Sheffield. I think we have done a good job, but it could have been done at least as well, and probably more painlessly, by a Middle English specialist unafraid to explore the little mathematics and astronomy involved. I wish I could convince a few Anglicists of this, because there is an enormous body of Middle English scientific literature for which the manuscripts have never even been examined, let alone read or edited. Mine had lain in a library for five hundred years, falsely catalogued and untouched. Such texts, of the greatest literary and linguistic interest but seldom involving complicated science, have never been mentioned in the didactic literature of medieval England.

George Sarton and many other scientist historians of science did not cavil at the need to learn Arabic; Neugebauer undertook his superb work with Babylonian mathematics written in cuneiform, Needham with the immense bulk of classical Chinese literature. Yet when I sought through England for a Hellenist to help in editing Ptolemy's *Almagest*, I could not find one

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willing to make an effort to pierce the mathematical *idiocy*.

Let me cite one more example, this time of a piece of work crying out to be done and neglected for more than fifty years. I speak of the Antikythera machine. Most of my readers will never before have heard of these little fragments of corroded bronze, dredged from a treasure ship dating from the first century B.C. and lying on the sea bed between Greece and Crete, off the island of Antikythera. They show the remains of a highly complicated, geared machine—as sophisticated as a modern chronometer—which was probably a planetarium of the sort that Archimedes is said to have built. If we could find out more about it we might be brought to a complete re-estimate of the power of Hellenistic science and technology. Either the Alexandrians did not write about such things or the evidence has been lost. For me, the Antikythera find is like opening the tomb of Tutankamen and finding a jet plane. Perhaps we know as much of Greek civilization as the Martians would know of ours if the only evidence to survive an atomic war were the contents of our art galleries, carefully preserved in subterranean stores. Could one reconstruct our civilization from the evidence of Picasso and Rembrandt? Yet there has been no clamor to study the Antikythera machine, and no Hellenist or Classicist has come forward to replace Heiberg or Heath in fundamental studies of Greek and Roman Science.

SO FAR I HAVE BEEN speaking of the humanistic *research* that is possible for those who turn their faces towards science rather than away from it. It remains for me to fulfill my promise and show how another aspect of these Scientific Humanities can be of great importance. I will not say much of the lip-service that is given to these subjects as bridges between the arts and the sciences. There is no real gap scholastically, but there will always be one in subject-matter. Teaching such subjects to scientists and to historians is already an established and very rapidly growing activity in many universities here and in Europe; indeed I predict that within the next decade it will be found in every considerable university.

What I seek is something larger, namely the establishment of the Scientific Humanities as a school within these universities. Like any other school it would have two functions, scholarship and education. Roughly speaking, these reflect the post-graduate and the under-graduate sides respectively. I have already spoken of the post-graduate research aspect and shall here add only that our greatest lack has been in attracting students—not through disinclination but because there were no attractive careers for them. A program

in the Scientific Humanities would provide such careers and would, I believe, draw a goodly share of the intellectual cream of our youth. When we instituted such courses at Cambridge some five years ago we found that the brightest would-be scientists were coming to us in dissatisfaction with being able to acquire only a limited view through specialization in a narrow field. We also got some of the most penetrating embryonic historians, theologians, and philosophers—students who felt that they needed to talk about science in the deepest fashion but who did not want to work at the scientific research front.

It is the undergraduate side for which I propose the new mass character, not as part of the study of history, or of science, but as a training complete as either of these, or as economics or education. What would the graduates of such a training do? They would fill the para-scientific professions and thereby relieve and probably cure the manpower shortage in science. By "para-scientific professions" I mean the schoolteachers of science, the editors and abstractors, the writers of books about science, journalists, and others who explain science to the rest of us. Most important of all are the administrators of science—the men in government, in industry and business, in the great organizations of scientific societies and trusts—men who have to understand the scientists and the significance of their work. Such men are the go-betweens for the active research front on one side and the rest of our world on the other. Willy-nilly, their actions have tremendous effect on the work of active scientists and equally far-reaching consequences on the relations between their work and the use to which the world puts the result. The greater part of our technology depends on them. Is it not fitting that these para-scientists should become what I spoke of at the beginning, namely those whose professional business it is to study and analyze the state of science-in-the-large? I doubt if such learning could be grafted onto the specialist courses for scientists or for anyone else; it is a huge field in its own right.

Consider the present state of these para-scientists. One might estimate, as a talking point, that for every ten people taken up to the research front of science, only one stays there. The majority of the remaining nine become para-scientists by a process of wastage. Once we could criticize the schools for sacrificing their educational program to the supposed needs of those intending to become scientists. Now we must criticize them for gearing their training to those who will continue to do research. If there is any less wasteful way of training such people, we certainly should give it every

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encouragement.

The Scientific Humanities offer the possibility of training scientists who would work behind the research front. The world needs them perhaps more badly than it needs the others. They could supply the manpower craved by industry and government and, together with their teachers, give us a body of learning which would not only deepen our understanding of science but would help scientists cure the internal diseases of their profession. Perhaps it is the only way that first class brains can be attracted while still fresh to scientific-managerial posts of industry.

Having come so far, perhaps I should say something of the syllabus that a School of the Scientific Humanities might have. I do this only with the greatest diffidence and very tentatively; America is the country of educational experiment, and some of my readers would certainly be able to draw upon a body of experience and knowledge much larger than my own.

SOME THINGS ARE certain. The history, sociology, and philosophy of science must play a large part in the program, acting, so to speak, as connective tissues. Also, there should be a series of survey courses covering the whole field of science at the highest possible level—even to explaining the content of the active research front. Such surveys present the danger of watered-down treatment, but this is by no means my intention. Relieving a teacher of the responsibility for training students to be original workers in his field should enable him to cover a much wider field in shorter time. No student could cover the whole range of such courses, but a suitable combination of them with special courses in education, business administration, etc., could lead to a variety of special careers.

Would this program work? I am a little doubtful about the high level survey courses but not at all about the Scientific Humanities. Are there enough people to institute such courses? We have some and, given the possibility of jobs, we can readily get enough to strike a good balance between teaching and research. What of students? I am sure we could get them of the finest quality and in sufficient numbers to make a brave start.

The scientists seem to inherit the world and all its forces of good and evil. But, like a rabble raising a republic, they know not their own constitution—only how to wield individual arms. Their leaders are fine fighters but pitifully unschooled in strategy and tactics. The time has come to examine this republic of science and seek more than empirical experience for its leaders. Humanists must not reject it and thus make of themselves the *idiots* of

science. Rather, they must help the republic toward a full coherence and do their utmost to prevent its dissolution. What the old humanists did for classical learning the humanists of today must do for science.

This article is from a paper read at the annual American Humanities Seminar held by The University of Massachusetts. Seminar sponsors, in addition to the University, were The Humanities Center for Liberal Education and The College English Association.

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..... The Scholar's Scratch Pad

Some Music From the Spheres

HARLOW SHAPLEY

I am looking at my crystal ball—a sphere—so crystal, so transparently composed, that many of you cannot see it. Can you, sir? Or you, sir? No imagination! I shall use it for a small adventure in horoscopy. I shall try to make an approach to a horoscope for the human race. At first glance I see trouble ahead. I see a confused, lonely man off the fairway in a sand trap, gazing wistfully at a distant putting green. I see dark forms, menacing figures, dancing in the shadows of the bordering woods.

Is there not someone to help select what iron to use; someone, not imprudent, to plan the approach? If there is, this lonely man needs him. From now on, will it be just one damned sand trap after another?

Turning the crystal ball a little I seem to see a broad land full of laughing but worried people. They also are in the rough, and confused; they seem to have wandered unwittingly off the fairways. They search for a cause thereof; did they slice, did they hook? They search for a scapegoat to blame for their loss of general directitude, and

only slowly do they begin to recognize that they are their own scapegoats. They begin to fear that never again can they, in the light of recent disclosures, pretend to a nationally practiced political virtue. Ah! Imprudence! Meanwhile the dark figures dance gleefully in the shadows.

I do not like what I see in this crystal ball, this 1958 model. Let's put it aside and try this larger one, the 1970 model. Strange and weird things now appear; I am unable to understand them fully or even partially. Much is obscured by social smog. Apparently by 1970 another small but useless war has been fought. Already atomic energy courses through many of our power lines. The Near East states are sinking back into their natural feudal corruption. Brave new attempts to reorganize the world have temporarily prospered—and collapsed again because interracial humanity is only skin-color deep. The cult of being led around submissively has grown in prevalence. The dignity of the individual is less talked about. It is a sad, sad picture, and it leads me to want to break that cloudy crystal ball to bits. Let's build one nearer the heart's desire. Let's consider further the here and now, and tomorrow.

With deliberate follow-ups of action, we may defeat that 1970 horoscope. By 1970 we may even stop dichotomizing the intellectual enterprise, stop opposing those words "science" and "humanities." We may unqualifiedly revere knowledge, and the pursuit of it; we may habitually make an integrated approach to learning.

But I cannot keep my thoughts off the

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distant future. I dreamily wonder what this universe will be a thousand years from now. To appease me and my desires, therefore, I shall sketch two themes.

One could well be labeled "Damnation," the other "Redemption." The first sketch will refer to attempts at the pandemic damnation of the human race. How might man's career on this planet be terminated, and the biology of the earth returned to the durable clams, kelp and cockroaches, which dominated the lands and seas for hundreds of millions of years before the human experiment got under way?

I have looked rather carefully into this matter of terminating man, with a surprising result; namely, it appears to be a hard job to shake him off. He is an ingenious critter, and in his relatively large forebrain he may figure out escapes from extinction—escapes from what appears to be coming to him soon and inevitably—soon, on the cosmic time scale.

No one of us who has thought about it expects man as we know him to be on this planet a million years from now. Let's base our speculations on the much better chance that he could still be here, in spite of hell and high water, ten thousand years from now—that is, one hundred centuries from this epoch. Our dealing with the future will take both logical analysis and imaginative poetry—it will take science and the humanities intermingled.

Life on this planet now depends completely on the sun for its continuity, as it depended on the sun some three or four thousand million years ago for its origin. To meet our need, the sun must stand by for one hundred centuries and remain steady. Explode the sun and you expire the biology of this planet. Dim the sun and you damn the man.

The sun's fuel supply of hydrogen is very great. At the present rate it will shine benevolently for billions of years, rather closely thermostated throughout that time. The stars are so remotely scattered from one another that a lethal star-sun collision is out of reason for much longer than our ten thousand years. If the nearest star, Al-

pha Centauri, were aimed directly at us, which it isn't, and were approaching as fast as one hundred miles a second, which it isn't, it still could not get to us in one hundred centuries—stars, you see, are so isolated in the ocean of space. Also, the sun is of a calm variety, with no likelihood of explosion.

The earth moves in a stable orbit. There is no chance, our celestial mechanics tell us, that it will break loose, escape from the sun, and freeze to death out in empty interstellar space. And there is no chance that it will spiral into the sun and perish of temperature. Equable climates for the next hundred centuries—this is my forecast.

We see no way, therefore, of clearing the earth of *Homo sapiens* through the misbehavior of stars, of sun or of earth.

Could the seas rise (high water) or the land sink (hell) and drown us out? This is not at all likely. We have had continents and oceans for more than half a billion years, and there is no likelihood of serious change in the land-water relation in the next ten thousand years.

How about the atmosphere? It is safe. The inert gas argon is slowly increasing, and possibly the life-building oxygen molecules also increase in number, but both at a very slow rate. Carbon dioxide from the volcanoes and from industry? There is too little to bother us when it is diluted in our quintillion tons of salutary air.

I could spell out in some detail the dangers to man from wild beasts, from insects, from fungal growths, and even touch on microbes and disease germs. But all these have been thwarted in the past in their attempts to eliminate *Homo*, and they can be thwarted in the future if we retain something resembling our current culture.

I am glad to report that it looks pretty safe on this planet for ingenious man—safe, that is, but for one horrible threat. Man has a deadly enemy at his throat—one that may succeed in returning the planet to the clams, kelp and cockroaches.

The enemy is, of course, himself. Man's worst foe is man. We all know how, with

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man-made bomb concussions, with radiations and poisons, that cruel enemy can carry out his lethal enterprise. Poor Homo! It would be so wasteful to do him in. He is such a nice animal, so kind of heart at times, so cute, so remarkably put together, with opposable thumbs that have created art, and roving eyes that have provided posterity; with his sweet vocal cords, his powerful forebrain. It *would* be too bad, for he is so well-equipped to appreciate the universe—its beauty and its cosmic music.

On happier planets, which circle stars in grander galaxies, the most highly sentient beings may have solved this problem of suicide or survival. I wonder if we could do something about it by giving heavy thought to the matter. I wonder if we shouldn't do something. At least we might start programs that aim specifically at our retaining possession of the planet for the remainder of this century—programs that aim to let us hold on long enough to provide that our near, dear posterity may enjoy something of what we have enjoyed.

So much for the Damnation theme. Now some words on Redemption—on a practical redemptive plan. Many years ago, in the thick of our second blind world war, I wrote an essay entitled "A Design for Fighting." It was, strangely enough, printed in this magazine, the *American Scientist*, the *Atlantic Monthly* and two anthologies. But nobody enlisted for the fight. Scarcely anybody, that is, and those few who did were rarely in the front lines. There was some talk about it, however, and perhaps some good did come of my simple suggestions. I am now inclined to revise that design somewhat, or at least dust it off and try again for a sale.

The argument in "A Design for Fighting" was simply that we should note that man is recently from the jungles. We should observe that we are still animals rather than angels. Fighting comes naturally. In fact, it has in the past been highly advisable to fight, whether our enemies, real or imagined, were beasts or demons. We grew up because we did fight. Now, with a nostalgic

look back to those brave, naked and brutal days, and another look at today's jungle man all dressed up in a dazzling culture, we still find the need of enemies to be comfortable and progressive.

There is no sense, however, in losing our lives and our civilization by fighting each other, by fighting *within* the species. We need *outside* foes that we all fear and hate, some terrible common enemy that we instinctively dread. It might bring the human race together. We will unite when the danger is fearsome enough.

My first thought, naturally, is to encourage the Martians to try to clean us Terrestrials out of the solar system. That would unite Yank and Slav and Hindu and Jap—everybody. But apparently the Martians are jellyfish when it comes to fighting, or, more likely, they are fungoidal sedentaries. There is no fight in them. And actually, of course, they do not exist. There is, to be sure, a hypothesis that they do, but it would be no fun fighting a Martian hypothesis. It would not get us together and eliminate intraspecies strife. The Venusians, on Venus, are equally impotent.

Where can we find an enemy that would rally us all to the colors? There are many, all of varying potentiality: human disease, the most obvious; human hunger; economic slavery; illiteracy; blind suspicion. The Great Enemy is the Tyranny of the Unknown. That Tyranny, which feeds on superstition and ignorance, could be overthrown if we had a workable will and a will to work.

If we were reasonable, rational and well-minded, we could oppose some of these enemies with gusto, and we might bring peace and understanding to the species as a by-product.

The scientists have shown the way in that magnificent operation, the International Geophysical Year—sixty-six nations ambitiously working together to solve common problems. The sciences involved are: oceanography, meteorology, volcanism, glaciology, seismology, antarctic exploration and exploitation, ionospheric physics, solar radiation, magnetism, cosmic ray intensi-

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ties, and satellites. Work proceeds effectively with the scientists. In the I.G.Y. we co-operate; in the U.N. we expostulate.

But back to the Design. Let's continue indefinitely some of the International Geophysical Year's co-operations. It will cost us something, but, for next year, it would cost considerably less than a futile battleship. And let's undertake, either along with many nations, or with the U.S.S.R. alone, other "international years" where full co-operation and complete communication can be practiced. What about an international

medical research year or an international cultural exchange year? We should all willingly ponder and work for such Homo savers. Certainly we must continue to promote defenses against the devilish devices of man's worst enemy.

So saying, your agent from the galaxies deflates the 1970 crystal ball as well as this 1958 model. And he reminds you again, dear Brutus, that it is not in our stars but in ourselves that we shall find salvation.

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FOURTH ANNUAL

AMERICAN HUMANITIES SEMINAR

July 13-15, 1959

University of Massachusetts

Sponsors

The Humanities Center for Liberal Education
The University of Massachusetts

★

The Question

How may humanists work more effectively with

Science and Technology
Labor and Management
Government
Medicine and Law
Education and Religion
Press, Radio, and TV

to strengthen international exchange

and

to achieve cross-cultural goals?

★

Four Problems

1. INTEGRITY: How advance cross-cultural cooperation without violating cultural integrity?
2. IMAGE: How shape an effective image of man, fused from, but transcending, national cultures?
3. VEHICLE: How best utilize the vehicles of personal and public communication?
4. PROJECTION: How apply the experience of the Geophysical Year to an international cultural year?

Background Information

The American Humanities Seminar is an annual function of the Humanities Center for Liberal Education and the University of Massachusetts.

Sponsors of previous seminars have included the College English Association with the University of Massachusetts. The Planning Consultation for the 1958 Seminar was made possible by a grant from the American Council of Learned Societies; cooperating in that Seminar was The President's Committee on Scientists and Engineers.

Keynoting speaker at the first of these seminars, held in 1956, was Perry Miller of Harvard University. In 1957 George Boas, then Head of the Department of Philosophy at Johns Hopkins University, made the opening address. Last year, proceedings began with an address by Frank Porter Graham, United Nations Representative in India and Pakistan. Among other speakers were Percy W. Bridgman, Harvard University; Theodore F. Koop, Director of Washington News and Public Affairs, CBS; Harold Taylor, President, Sarah Lawrence College; William Homer Turner, Executive Director, United States Steel Foundation; Harlow Shapley, Past President, American Association for the Advancement of Science.

The Seminars usually bring together 75-100 men and women known for serious thought and action in science and the liberal arts, and in such fields as business, labor, and government.

Registration Fee

Lodgings, Meals, Transportation

Seminar registration fee of \$50.00 will cover cost of all meals, including reception and dinner meeting at Lord Jeffery Inn and Deerfield Academy. It also defrays cost of lodgings at Crabtree Dormitory on campus, Monday noon through Wednesday noon. Rooms in dormitory will be available at no extra charge for use on both Sunday and Wednesday nights by those who may wish to arrive early and stay late.

Transportation between the campus and Springfield will be provided upon request and at no extra cost for those arriving and departing by train or plane.

Please make checks payable to: American Humanities Seminar.

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Program *

MONDAY, JULY 13

- 12:00 Opening Luncheon
- 1:30 General Session
- 6:00 Tour of Old Deerfield (transportation provided)
- 7:00 Dinner Meeting, Deerfield Academy

TUESDAY, JULY 14

- 9:00 Group Discussions
- 12:15 Luncheon Meeting
- 2:00 Group Discussions
- 5:45 Reception: Lounge & Garden, Lord Jeffery Inn
- 6:30 Dinner Meeting, Lord Jeffery Inn

WEDNESDAY, JULY 15

- 9:00 Panel Discussion
- 12:15 Luncheon Meeting
- 3:00 Closing

*All events will take place in the Student Union Building, University of Massachusetts, Amherst, Massachusetts, except as otherwise indicated.

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Dear Dr. Goldberger:

I have received your invitation to attend the 1959 American Humanities Seminar:
() I plan to attend and would be pleased to receive registration
blanks and transportation information.
() I do not expect to attend.
() Other commitments make it impossible for me to attend.

I suggest you consider inviting to the Seminar:

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The Intellectual in Action

HAROLD TAYLOR

I BEGIN with a comment by the Greek citizen Pericles, who had so much to do with the public life of Athens.

Unlike other cities, Athens expects every citizen to take an interest in public affairs; and, as a matter of fact, most Athenians have some understanding of public affairs. We do believe in knowledge as a guide to action; we have a power of thinking before we act, and of acting too, whereas many peoples can be full of energy if they do not think, but when they reflect they begin to hesitate. We like to make friends abroad by doing good and giving help to our neighbors; and we do this not from some calculation of self-interest but in the confidence of freedom in a frank and fearless spirit. I would have you fix your eyes upon Athens day by day, contemplate her potentiality—not merely what she is but what she has the power to be, until you become her lovers. Reflect that her glory has been built up by men who knew their duty, and had the courage to do it. Make them your examples and learn from them that the secret of happiness is freedom, and the secret of freedom, courage.

This is also the secret of Athens' greatness in the greatest days of Greek civilization. I believe that what Pericles has said is profoundly true. We all know what he means when he says that people can be full of energy when they do not think, but when they reflect they begin to hesitate. The man of action, or the man who is doing well and who feels happy with things as they are, is annoyed to be asked to reflect on himself, or he senses danger to his own situation in the possibility that he may be wrong.

This in a real sense is the reason for the suspicion held in some quarters of America for the intellectual. The intellectual, the social critic, the thoughtful citizen, put things in doubt. They question what exists, and make anxious those who have adapted themselves fully to what exists. The kind of self-confidence needed by a person of a country is the kind which has a frank and fearless spirit, which has no fear of being questioned or criticized. There is a difference, of course, between



self-confidence and complacency. Complacency wishes to ignore criticism, to prevent it, or to explain it away. It is thoughtless and mindless, and it is based on self-interest.

What Is an Intellectual?

Self-confidence is built upon an honest appraisal of the reality of things. It is based on the belief in knowledge as a guide to action. The union of thought and action, the creation of the ideal from the materials of the real, the desire to imagine what can be in place of what is—these are the elements of a philosophy which defines the true intellectual in action.

We have no separate intellectual class in this country, and it is my hope that we never will. The ideal society is one in which the citizens think for themselves and do not want others to do their thinking for them. There are, of course, intellectuals in every society, and there are intellectuals in America. But in America they do not form a class of political or social leaders whose function it is to think for the rest. Many of our political leaders take pride in not being intellectuals and take pains to make it clear that they are regular Americans without any intellectual connections. The intellectual in America is tested by his society in the same way as anyone else—by his ability to perform the tasks he under-

Harold Taylor is President of Sarah Lawrence College. This paper is the text of an address given at the Third Annual American Humanities Seminar at the University of Massachusetts, July 15, 1958.

takes. If he is a novelist, can he write books which are interesting, which have in them the ring of truth, which compel the attention of the reader to the image of human life which they proclaim? If he is a newspaper writer, can he get down the facts, can he perform his task of informing the reader? If he is a composer, can his music command the attention of musicians, can he write for opera, for full orchestra, for dancers? If he is an educator, has he anything to say which can persuade his listener or evoke a response toward the ideas he advocates?

In that case, who is the American intellectual? He is to be found in many areas of American society. The writer, certainly, the novelist, the editor, the poet, the playwright, movie and television writer, the teacher, the government official, the scientist. But every scientist and every teacher, for example, is not an intellectual. A person who teaches or who carries out research may perform his task without a serious interest in the ideas with which he operates. An intellectual, in other words, is a person who is interested in ideas and carries on a serious intellectual life of his own. If he has no private world of ideas, he is merely a practitioner or a technician in the field of ideas.

There are corporation executives who are seriously interested in the theory and practice of corporate enterprise, in economics, in political philosophy, in public affairs, and are among the American intellectuals. I submit that the man who wishes to make a contribution to his society, whether as an office-worker, a carpenter, or a college professor, must have some degree of interest in ideas and some degree of ability to deal with them. Otherwise, he has eliminated the dimension of his life which has to do with himself as a person, his citizenship, his sense of public responsibility, his relation to his own time. It is for this reason that I believe that every boy and girl must have a full opportunity for education, not merely for vocational training, but for sharing in the intellectual life of his society, in whatever degree his capacities and interests may allow.

The ideal for American society is therefore one in which the intellectual and aesthetic interests of the citizens are an element in the daily life of the country. For this reason I welcome the mass culture which is so often despised by our social critics, and I believe that the spread of mass culture through television, radio, magazines, and newspapers and every part of the mass media is a significant part of the development of America as a civilization. For a similar reason I welcome the impending expansion of our college population, without fear that in such an expansion our intellectual standards will be lowered and our educational system debased.

This is not to say that I look to a time when the interests of our most advanced intellectuals—research scientists, historians, poets, philosophers, or writers—will be shared by the entire population. This is not a natural

or attainable goal, since those who are at work in particular areas of intellectual advancement must by definition be involved with ideas which will not be immediately available to everyone. It is to say that the dissemination of ideas and the enjoyment of art on a mass scale has a positive effect on raising the level of intellectual interest and information by the total population. By putting more of our young people and the adult population into the stream of mass culture we do not debase standards, we create new possibilities for the development of higher standards. It is the responsibility of the rest of us who already make some claim to intellectual interests and values to seize every opportunity to encourage the spread of thinking, whether this be carried out in the home, in the community, at PTA meetings, in the school, adult education courses, in television, radio, magazines, or college.

Responsibilities of the Intellectual

Education, today, is being talked about, debated, discussed, argued, and even advertised in such volume that sheer weight of attention is bound to bring reforms in a positive direction. If we, as interested citizens, intellectuals, and educators, do not add our voices to those now being heard, it is our own fault. We have been given the opportunity. It is up to us to take part, to speak up, to express conviction. If we do not speak up, it must be either that we are afraid to, or that we have nothing to say. I have little patience with the argument that this country is anti-intellectual. What country is not, merely by the fact that no country as yet has a system of public education which can involve all of its citizens in an interest in ideas and cultural values? Of course, there is anti-intellectualism. But it is not to be overcome by a retreat from the issues, nor by condemning mass culture and the sins of the advertisers.

Let me turn for a moment to one sector of the educational front—the sector occupied by college professors. We hear more about their salaries than about their ideas, although, of course, we must speak fiercely and urgently about salaries. But, at the present time, money is what college presidents and college professors talk about, while business men, admirals, and bankers talk about education.

"The function of a teacher," says Alexander Meiklejohn, "is to stand before his pupils and before the community at large as the intellectual leader of his time. If he is not able to take this leadership, he is not worthy of his calling."

If the teacher allows that leadership to be taken away from him by others—by politicians investigating colleges, by pressure groups who try to silence him, by those who speak more loudly outside the schools and colleges—this means simply that he is not fulfilling his mission as a teacher and an educator. It is the task of the intellectual to express his view of the world in his

own way and to celebrate the possibilities in human existence. I believe that it is because teachers in the colleges have not considered their task to be that of exercising intellectual, social, or cultural leadership before their pupils and before the community at large that their pupils and the community at large have become content with what they find around them, have accepted the values of their own society, and have sought success in material terms.

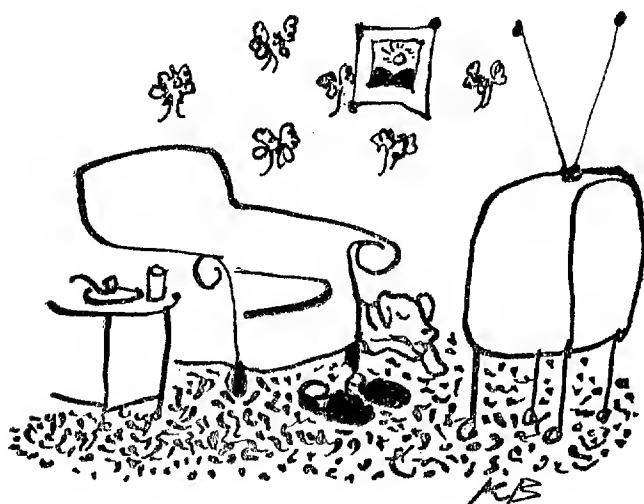
Our Culture—As the Young See It

"Success for me," says one student who speaks for many of his contemporaries, "would mean a job I could leave after eight hours and that would provide for self-fulfillment within a framework of inconspicuous luxury."

Now surely this is an over-modest demand, and much less a demand than the young should be making. The demands are not less because this generation is less idealistic than its predecessors. It is more talented, better educated, better able to handle its problems, and is genuinely concerned with human values. But it has been taught by its society to recognize the advantages of material success and personal security, but not the means of translating idealism into productive action. This seems to me to be the responsibility of the contemporary teacher.

I turn to another student, with a different view of life and a different view of his society. He is speaking of the culture he finds around him, in his university and in his country.

Everywhere is blah, and when our own blah stops like a toy that has run down, we turn on television and the phonograph to stuff the void. Everywhere, in the subway, in the airport waiting-room, in rest rooms even, the music plays and races through our veins like a file of ants—but only while the Wurlitzer whirls. When we run out of dimes, when the joint closes up for the night, not one beat remains in our bones. Only a pre-dawn inquietude. But, happy to report,



"a framework of inconspicuous luxury..."

we are slowly erasing this unpleasantness from our daily schedule: with the pocket-sized radio, we soon will never walk alone.

We have no other-rooms, no private dens, we do not have the back-shops Montaigne advised all men to keep: our hearts are public houses. . . .

Wine needs time and the darkness of a cellar. But the minute we receive any juice at all, we spill it out before it can assume an intoxicating dimension: hence the flatness of our speech and of our lives. . . .

If this is the character of our culture, as seen by the young, if, in fact, all the generalizations about conformity, security-mindedness, complacency, and banality are true—what is the solution? How do we get nonconformity, boldness, daring, excitement, flavor, freshness, originality?

Again, it would be easy to condemn. But we have had much of that. It is a negative time. But the question is, What do we do?

Let the Poem Speak for Itself!

One thing we who are in the colleges can do is to concern ourselves with the life of the intellect and the imagination again, and remind ourselves and the public, that the purpose of education is to develop people who can think and act for themselves. We have become so engrossed in the practical problems of education and the culture that we find our teachers talking only of "problems"; we have become lobbyists for the intellect, full of promotional devices for advertising the virtues of the humanities, the sciences, or foreign languages. Even in our teaching we have been pressing for attention to cultural and aesthetic values rather than allowing the values to be seen, enjoyed, and savored by ourselves and our students. We must let the poem speak for itself, in its own purity and enchantment, without our eternal explanations and analysis. Let the music be played and listened to, without explanation, with no set of instructions on how to listen, what to look for. Let the idea generate its own response in the minds of our listeners, let them see for themselves that the idea itself is passionately held by the man who proposes it. There is too much concern for classifying, and thus defeating, the new. When a few young Englishmen say bitter things about their own society and the place of the intellectual in it, they are immediately classified as Angry Young Men, who, in fact, are less angry than unhappy and complaining. When a group of American writers and poets give us a model for a life of drugs, travel, jazz, and mystic experience, we confuse and elevate their meaning by classifying them as a Beat Generation. This is intellectual promotional work, not creative thought or contemporary literature.

W. H. Auden spoke in his poetry lecture last year at Oxford of a teacher of Anglo-Saxon who had lectured to him.

"I do not remember a single word he said, but at a

certain point he recited, and magnificently, a long passage of *Beowulf*. I was spellbound."

I think we need to have more people spellbound, entranced, joyful, enchanted. They need not stay that way permanently, but they need to know from direct experience what it means to be captured by a feeling or an idea. If we are overimpressed by money and material values, if our culture is lacking in spiritual content, then is it not the task of the artist, the architect, the dancer, the playwright, the philosopher, the composer, the social thinker, the scientist to show us what he can do and to have enough confidence in what he is doing to work in his own way without regard to the number of people he influences or ever reaches? With the present resources of the mass media, the present demand for more ideas and more talent will leave few who have such talent alone in obscurity.

How Do We Break Out of the Conformist Circle?

I would like to look further at the idea of nonconformity, a virtue widely celebrated but rarely visible. How do we get it? Certainly not by trying to nonconform. Deliberately to cultivate nonconformity is to act falsely and hypocritically. The conformist can very well ask, If a situation is a good one why change it? If teenagers speak the same language, dress the same way, think the same thoughts, or if their mothers and fathers in the suburbs of Chicago, San Francisco, Cleveland, New York, and Boston all have the same kind of houses, cars, and ideas, how do they break out? Should they move to the city? Read only James Joyce? All switch to MGs in place of those fin-tailed, gas-burning monsters of the automobile industry? Should they drop John Foster Dulles in favor of Mendes-France? The classical ballet for Martha Graham?

I can't imagine that this would give us anything but new forms of conformity. Already there is a standard liberal stance, and modern art itself has a grip on modern taste from which only a few can depart. Those who

are influential in creating standards of aesthetic taste are themselves continually searching for new forms.

What has happened is that the concept of opinion-makers has transferred itself from business with its advertising and promotional instruments until now it is assumed that there are influential leaders in all fields—from art to politics—who mold public attitude by their techniques of persuasion and the engineering of mass opinion. The counterpart to this is the public opinion poll which tells the man who is trying to lead opinion what the public thinks on every conceivable issue, so that then he can trim his opinion to suit the people. This is the double-edge of conformity—the conformity of democratic leadership to citizens' opinions, and the conformity of the citizens to the acceptance of brand names attached to public figures and to ideas. People seem to be reading the magazines to see what they should think, while the editors and political leaders anxiously watch the readers and listeners to see what they are thinking. This completes the conformist circle.

Again, how do we break out?

In the first place, I question the concept of the opinion-leader and the masses. I also question the wisdom of wanting to know what other people think before you say what you think. College presidents are, among others, considered to be opinion-leaders, although a great deal of the time they are business managers and administrative experts, busy with the public relations mechanisms of making their institutions attractive to the public and finding money to support them. They therefore do not lead opinion, but follow it in search of funds.

However, college presidents, among hundreds of others, receive through the mail masses of pamphlets, books, circulars, and statements from the United States and foreign governments, businessmen, editors, industrialists, educational organizations, few of which they can possibly read and fewer of which they could use in action, even if they wanted to. As W. H. Whyte's book



"... conformist circle ..."

of several years ago asked, "Is Anybody Listening?"

Certainly there are public figures whose views count and whose opinions are respected. But they "form opinion" because they are thinking freshly and well, independently and soundly. We need to understand that the public consists of individuals, not of masses of subscribers or listeners, and that these individuals are considerably more intelligent than they are assumed to be. That they are on the whole ill-informed, we know from the polls showing, for example, that 79 per cent of Americans in 1953 did not know what the initials NATO stood for, 54 per cent knew nothing about what the United Nations was doing.

But there are reasons for this, deep in the culture and in the educational system. The mistake is to generalize from this, and to say that therefore the American people should be talked down to, should be "sold" ideas like soap, and should be manipulated into holding views which the "opinion-leaders" want them to hold. I do not believe that such efforts to manipulate opinion fall within the ethics of democratic government, but more than this, I do not believe that in the long run they are very successful. Public relations efforts create their own antidotes and create after a while a cynicism about the efforts rather than an acceptance of the propaganda—unless, of course, there is solid truth and sound opinion at the heart of the enterprise, in which case the truth may be believed.

The break with conformity which I propose, therefore, is an old-fashioned remedy and repeats what Pericles, among others, has already suggested. It is the remedy of the nonconformists, Robert Frost, Frank Lloyd Wright, Albert Einstein, Carl Sandburg, Martha Graham. It is to tackle the thing which matters most to oneself, in a frank and fearless spirit, being true to oneself, and refusing to be deflected from that central enterprise either by the attractions of material success or by the disapproval of the public. This is a philosophy of risk, a philosophy of experiment, and of true individualism. The independent man must not be alarmed at where his independence will take him. If it takes him to conservatism, he should accept himself as a conservative and not become an anxious liberal. If he should then become a radical, then that is what he should be, and not a cynical conservative.

The Intellectual and National Policy

Finally, I wish to turn from the intellectual as an individual to questions of national policy. I see an enormous need for the full acceptance of the intellectual and the artist by the United States government. I would like to revert to type for a moment and speak of money. The United States is rich in resources, material resources, human resources, cultural resources—we have them in profusion. Yet we behave toward our cultural resources like niggardly parents of an unwanted

child. The simple fact is that America can be better understood both at home and abroad today by the testimony of its writers and its artists than by the threats of military power and the statements of politicians.

When we learn of the reception accorded to our creative artists—Marian Anderson, Leonard Bernstein, the Philadelphia Symphony, the New York City Ballet—and to our intellectuals, whose work abroad is in some cases better known than it is at home, we can regret that the United States government lacks a coherent cultural or educational policy. We have not yet worked out a way in which the creative arts in America can be financially supported. This is true also of science and education, and if we put together the arts, the sciences and education, we can say that most of the sources of American culture are underfinanced.

This is partly because we do not yet realize how great a part can be played by the arts and sciences in our daily lives, and partly because we do not yet realize how important our political and cultural contribution can be to the world at large. Ahmed Bokhari of Pakistan has put it, "East and West can now, for the first time, meet on terms other than conquest and exploitation." We know from our recent experiences with visitors from the Soviet Union, from the exchange of scientists, educators, industrialists, and others between countries, including the United States, that to share in the exchange of ideas is perhaps the most important single factor which can ease the tensions among all countries. Respect for ideas and for intellectual and cultural achievement rises above politics and governments.

It is for this reason that we should be happy that our part in the Brussels Fair is one which is not devoted so much to propaganda as to the presentation of American architecture and American culture in its reality. For this reason we should regret that our government has not seen fit to give more of its support to the artists who could bring the excitement of the American performing arts to Europe if only there were funds to do so.

It is also true that in the new countries in the East where national independence has been late in beginning, those who serve as national leaders are themselves intellectuals and respected as such, among them Premier Nu of Burma, Malik of Lebanon, Nehru of India, Bokhari of Pakistan. We need also to consider the role of intellectuals in European government where Malraux, one of our most distinguished men of contemporary arts and letters, has always been involved in the political and social issues of his society and is now a government official.

Yet our government sends too few books abroad, either in English or in translation to reach the millions of potential readers in Europe and the East, at a time when the Soviet Union is translating and distributing, at prices ranging from ten cents to eighty cents, millions of textbooks and Russian works in languages ranging

from Urdu to English. There is also too great an emphasis in the selection of the books we do send abroad or those which emphasize the American political system. Again, we are not content to allow our arts and culture to speak for themselves at a time when the countries of the world do not wish us to tell them what they should think about us.

This is not an ordinary period in American history. It is the first time in the history of civilization that one country has ever had the chance of leading the whole world in creative and democratic experiments in social planning. It is the first time in history that any country has had the means, both in material wealth and in social structure, to give to every child born an opportunity for education up to the height of his powers. It is the first time that any country has had the economic strength to wipe out entirely the slums, and with them the bad human relations, the juvenile delinquency, and the evils of congestion. It is the first time that it has been possible for the entire resources of Western culture—its music, poetry, drama, literature, ballet, art objects—to be brought to a whole population through television, motion pictures, radio, and the mass magazines.

These possibilities coincide with shortened work hours and higher pay for everyone—everyone, that is, except artists, intellectuals, teachers, and educators.

We in America are at the beginning of what amounts to a cultural revolution made possible by science and education, moving in an incredibly short time from education and culture for the few to universal education and a high level of mass culture for the total population. With the flood of new talent which will be forth-

coming from the millions more who will be in our schools and colleges, with the thousands of new writers, artists, architects, planners, builders, composers, playwrights, and scientists, we are now approaching a time when the achievements of the American past can be seen to be just the beginning of a magnificent new era in American culture.

But we could lose the revolution easily by failing to recognize the content of our own tradition. Our tradition is not conservatism, or middle-of-the-roadism, or moderation. It is individualism, liberalism, humanitarian democracy, and it is progressive, stemming from John Locke, John Stuart Mill, Tom Paine, Walt Whitman, William Lloyd Garrison, Woodrow Wilson, William James, John Dewey. There are challenges within our tradition which face us now. They center in the challenge to the American mind to express itself in new forms.

It will be clear, I imagine, that I am among those who believe that we are entering a new era which is full of promise for creative change and for the expansion of new frontiers. It will also be clear that I hold the view that the educated man, the intellectual in action, has a central part to play in the development of original ideas and the solution of social problems. It remains only for me to say that as you reflect, with Pericles, on what your country has the power to be, that you do as he asks, Reflect that her glory has been built, not by the security-minded, not by men in gray flannel suits, but by men and women who used knowledge as a guide to action, and by men and women who knew their duty and had the courage to do it.

"We need a prophet of a 'Brave New World,' not like Huxley's, but one that is really brave and really new. But before these geniuses can appear upon the scene, the experts in the natural and social sciences, together with the humanists, must lay the groundwork by the same cooperative endeavor that animated the various scientific experts who split the atom. In short, we must achieve a humanism that is truly scientific and a science that is truly humane."

—AGNES E. MEYER

From Education for a New Morality

For additional copies write to Dr. Maxwell H. Goldberg,
Executive Director, Humanities Center for Liberal Education,
University of Massachusetts, Amherst, Massachusetts

Society and the Individual

PERCY W. BRIDGMAN

A GREAT many people in this country have been disturbed because of the sputniks. Some of these have been disturbed primarily because of the implication that this country is falling behind in the technological race, and others have been disturbed primarily by the disturbance of the others. I am a member of the latter group.

From the very start we have adopted a fundamentally false position in our response to the Russian challenge. I suppose that none of us would maintain that the government and the institutions of this country are the best possible to meet conditions in a world changing as rapidly as ours. At a time when the major concern in this country should have been to find how to make our government and institutions better adapted to changing conditions, at a time when we should even have been daring enough to question the assumptions and to recognize the inherent limitations of democracy itself, we have allowed ourselves to be diverted into a passionate defense of our particular democratic institutions as the best, not only under present conditions but as the best absolutely, so that even to question them is treason.

The present concern with the Russian threat has been mostly centered about technology. It has been properly appreciated that technology in the modern world is of necessity rooted in "pure" or "basic" science, and the popular reaction of late has been to encourage pure science by all means in social control, and President's committees have been formed to consider the matter.

This reaction has betrayed a naive misunderstanding of fundamentals, which takes no account of the process by which pure science actually gets done.

How Is Pure Science Done?

Pure science, in the first place, gets done by individuals, and these individuals have rather specialized characteristics which must be recognized if their turning out of pure science is to be properly encouraged. One of the most important of these characteristics is

disinterestedness—the pure scientist is not primarily interested in the practical consequences or in the applications that may be made of what he finds.

His attitude toward his work may have various aspects, and it is probably not possible to give a single characterization. Because he is not primarily interested in the consequences, it may be said in general that he is interested in his work for its own sake. This again may be because he has a passionate need for the understanding of how things go, or because he has an insatiable curiosity to discover new things, or because he feels the challenge of difficulties not yet surmounted.

Whatever the motivation of any particular pure scientist, I think that he is almost never motivated by the simple pleasure which achieving these satisfactions may give him, but that he is possessed by some sort of inner drive which masters him. Feeling as he does, the man who does pure science cannot help being a little bewildered by the clamor of the public that he should get busy and turn out pure science in order that the United States may stay ahead of Russia, nor can he help feeling that if he should yield to the clamor he would lose something in personal integrity.

It is stylish at present to think of science as essentially a public activity and even to incorporate its publicness into the definition of science. It seems to me that on the contrary the most fundamental things about scientific activity are private and individual.

The drives which make the scientist go are affairs of the individual, as are also the esthetic pleasure in finding new harmonies in natural phenomena or in creating a beautiful theory, and the satisfaction afforded by the conviction of the logical soundness in the deductions of a theory, without which any theoretical activity is sterile.

Now these things, which make the individual scientist go, are all deeply human traits, possessed in greater or less degree by all men, in particular by the humanist. It seems to me that the drives which make the humanist go are much like those of the scientist.

The methods of the humanist and scientist differ in detail, but the primary reason they differ is because of difference of subject matter. The subject matter of the humanist is much less precise and much more complicated than that of the scientist, and for both reasons much more difficult, which is perhaps the most im-

Percy Bridgman, professor emeritus at Harvard University, received the Nobel Prize for physics in 1946.

portant reason why at present the humanities are so much less developed than the sciences. But insofar as the methods of intelligence are applicable to the problems of the humanist, and except for matters of pure esthetics, the humanist has to rely on the general methods of intelligence almost as much as does the pure scientist. In particular the individual is the ultimate unit which gives meaning to the activity of both scientist and humanist.

Society Is a Collection of Individuals

Although the individual is the ultimate unit for both scientist and humanist, wherever he is found, the potentialities of the individual are determined in a critical way by the characteristics of the society in which the individual is embedded.

It seems to me that the most important fact about society is that it is composed of individuals, is completely determined by them, and is completely describable in terms of their activities. There is nothing else—no state or other sort of super-thing, as is often assumed, particularly by those with a metaphysical bias in their thinking. For, given a detailed description of the activities of all the individuals in a society, then one has the material from which one may deduce everything that can be said about the society. This proposition is often not understood.

For one thing, it is sometimes felt that the converse proposition ought to hold, and the converse proposition obviously does not hold. Because if one is given everything that can be said about a society as society, one is not thereby in a position to say everything that can be said about the component individuals. "Society" is a word that applies only to certain aspects of an aggregate of individuals. The proposition is also often misunderstood because it is taken to imply that an individual in society displays no traits except those that could have been inferred from his behavior in an environment in which there were no other individuals.

This, I believe, is a mistake. But the proposition that a society is the total of its individual components has nothing to do with the proposition that in a society the individual displays properties that could not have been inferred from his behavior in a nonsocial environment.

The individual is determined by his total environment, and social environment counts just as much and possibly more than the impersonal environment of "nature." In fact, acceptance of the proposition is by no means inconsistent with the recognition, upon which modern psychologists so delight to insist, that the most important factors in shaping the personality of the individual today are social in origin.

Insistence on the value of the individual seems to satisfy some deep instinctive demand in the genius of our people and our tradition, and as such we may be

grateful for it. But the current philosophical arguments by which we seek to justify the value which we thus place on the individual seem to me not sound, for they often rest on a metaphysical basis or such religious considerations as that all human souls were created by God and are of equal value in His sight.

I do not believe that arguments of this sort would stand much chance of being accepted if they were freshly presented today. It seems to me that in setting the value which it does on the individual, our society has done the right thing but for the wrong reasons, and that we have been benefitting to a certain extent from sheer good luck. But it seems to me that there are rationally valid reasons for attaching the value to the individual that we do, and that when we base our thesis of the value and importance of the individual on the structure of society as component individuals, we are on rationally incontrovertible ground.

The Foundation of Society

It would, appear, then, that there are perfectly sound reasons for building our society on the individual. The persistent and consistent disregard of these natural factors in modern totalitarian societies, including both the Soviets and the Chinese, I believe, cannot help being a source of weakness which may possibly, in the long run, even bring about the failure of those societies or any others similarly constituted. Meanwhile, insistence on the naturalness of a society in which the individual is the unit, and the forced unnaturalness of one in which he is not, may well constitute our most effective argument when we try to persuade the uncommitted peoples to the superiority of our way.

The fact that other kinds of society are built on the value and importance of the individual is, I believe, not sufficiently appreciated in this country, nor is sufficient attention given to discussing what such a society might be like. I would like now to outline what one such possible other society might be like.

Let us begin by inquiring what are the most important features of society as it presents itself to the individual. One of the most obvious of these is that in a society the individual finds himself exposed to the action of forces which he does not experience in the absence of his fellows. These social forces may vary over the entire range of intensity, at one extreme being only the mild pressure of custom or public opinion which an individual may disregard with no consequence other than being thought a trifle queer, to forces which are irresistible and therefore effectively infinite.

ways in the background, and their potential exercise

These irresistible infinite forces are not often overtly exercised, particularly in our society, but they are always by society is a much more important factor as a determinant of the behavior of the individual than people are usually willing to say out loud.

There is, in the first place, the question of how we shall behave so as to conform to the presence of this force with as little unpleasantness or with as much profit to ourselves as possible.

But in an ostensibly free society such as ours there is a second aspect for the individual. In a free society all individuals play a very real role in creating this social field of force, and in this capacity the question for the individual is to what extent he will conspire with his fellows in exerting force on others of his fellows, and what principles he shall adopt to guide him in his consent to the use of such force on his fellows.

In prehistoric primitive societies we may imagine that it was everyone for himself, and that the individual would gang up with his neighbors to exert force on others of his neighbors as immediate needs might dictate, with no vision of long-range consequences.

But as societies evolved into something more mature and educated, the individual came to realize that he must control his immediate impulses if the society which results from his activities is to be one which will be pleasant to live in. I believe that even in present-day American society there is altogether too little appreciation or discussion of this question. This question is inadequately considered even in Christianity, for Christianity evolved in an environment in which the average individual played a role of negligible influence. Our failure adequately to consider these questions is perhaps partly due to an insufficient appreciation of the fact that society is composed of individuals.

Furthermore, this realization has been obscured by our almost universal propensity to think of government with a capital "G," as something in itself, which can do things as if it were an autonomous agent, in which the individual has no part and therefore no responsibility. But "Government" is merely a short-hand expression, useful for economy of communication.

The individual who sufficiently appreciates that society is composed of individuals will, I think, choose for the principles which are to govern his relations to society in general, and, in particular, the rôle which he plays in creating the social field of force, essentially the principles governing his relations to his neighbors.

Now one of the most fundamental of such principles, which have come to be accepted by men of good will in practically every society, is that no individual willingly accepts benefits from his neighbor unless he makes adequate return. Extended to the aggregate of neighbors which constitutes society, this means that no individual will willingly accept from society benefits for which he does not make adequate return to society.

This principle is more and more lost sight of as society becomes larger and more remote so that the individual sees less and less clearly that he cannot accept benefits from government for which he does not

make return without at the same time accepting without return from his many individual fellows.

The same individual, if he sees clearly enough the details of the mechanism, will not, in his capacity as a member of society, be willing to take part in exerting social compulsion on any individual to extend benefits to society unless society makes adequate return to the individual for the benefits which he gives it.

As society, in particular our own, grows larger, it seems to be even more difficult to see the operation of the mechanisms that demand the observance of this principle, namely, the principle that society should not exact from the individual without making commensurate return, than it is to see the operation of the mechanisms back of the first principle—the principle, namely, that the individual should not take benefits from society without making adequate return to society.

Nevertheless, these principles can be baldly put into such crude form as to hardly admit of argument. For it is generally accepted, in all societies, that the individual should not steal from another individual—no more should the individual steal from society or society steal from the individual.

Yet to what extent are these simple ideals met in any society which exists today, our own included? It is almost terrifying to see how fast and how far the democracies of the West are drifting in the opposite direction. These simple self-respecting and self-reliant principles are not inconsistent with democracy, but unfortunately we do not seem to want that kind of democracy. Instead, we seem to prefer the democracy of the welfare state, in which need is recognized as the fundamental basis of the relation between individual and society instead of value given for value received.

Theft in the Welfare State?

Yet even in the welfare state I do not believe that we have yet degenerated to the point where the individual would have the effrontery to steal from his individual neighbor on the plea that he needs his neighbor's goods more than does his neighbor. He is only willing to act like this when the forest obscures the trees, particularly when it requires a certain degree of imagination and intellectual effort to see the trees, an effort which is naturally inhibited by the human propensity for wishful thinking. It is not to be denied that many of the first consequences of the welfare state are pleasant, for we are all of us human enough to be pleased that society is concerned for our own well-being with no corresponding responsibility on our part.

On the other hand, it would seem to me that the larger the community the less prospect of success welfare state principles have. The diversity of taste and need in a large community is, for one thing, a factor making for difficulty. This is particularly obvious on a world-wide scale, where the units are nations of differing

social, political, and religious philosophies and traditions, and where the needs of the individual are often incommensurable.

It seems to me that in the administration of our foreign aid program since the end of the war we have put ourselves in a fundamentally false position and that this is an illustration of the difficulty of extending the welfare state ideal to wide areas.

The form which our aid takes has too often been dictated by our idea of what the other fellow should want rather than by his needs as he sees them. Too often the plea justifying foreign aid has been put on a philanthropic basis, whereas it would have been simple honesty to say that the main reason was our fear of Russia.

We should have said: "Here is aid which you can have on terms conducive to mutual self-respect—take it or leave it."

Encouraging Pure Science

We have already seen that technological progress is not possible without an accompanying pure science, but we still have to ask under what circumstances the individual will engage in pure science. It is generally recognized that special training is necessary, and a large part of the popular discussion has been concerned with how to make such training generally accessible and how to persuade those who are qualified to take it.

It is not sufficiently recognized that the man capable of creative activity in pure science is rare and exceptionally endowed intellectually. Not only is this fundamental fact not sufficiently appreciated, but even when it is appreciated the average person exhibits a surprisingly great reluctance to admit it out loud.

This reluctance is due in large part, I believe, to a feeling that exceptional mental endowment is in some way undemocratic, that society therefore should not recognize the occurrence of individuals with such gifts, and that the individual who possesses them should conceal them as much as possible, and certainly not expect treatment at the hands of society different from that of his mediocre fellow.

It seems to me that here our American society reveals one of its most serious weaknesses. If there is one fact about human beings more important than another it is that they differ in ability, and that some of them are occasionally of supreme ability. The progress of the race has been due to these few. It has become the fashion of late to deprecate the importance of the exceptional individual, and to lay the emphasis on the general advance of culture or the *Zeitgeist*.

It is fortunate for the race that there have been exceptional men. We do not like to admit it, particularly with regard to intellectual ability. Democratic or not, however, that society has elements of strength in which exceptional ability is admired and rewarded.

This does not mean scientific ability only, but ability in any of the humanistic enterprises, and that society is fortunate in which it is cherished.

It would seem that in any society like ours there is a degenerative process continually at work which gradually results in a displacement of power and influence into the hands of the mediocre, for there is no denying that average man is also mediocre man. It is in the reshuffling of conditions attendant on the breakdown of an old society and the emergence of a new one that unusual ability finds its best opportunity. Perhaps this country has now been stable too long.

The Drift Toward Mediocrity

In this drift toward the ascendancy of mediocrity it seems to me that organized labor has played a prominent and by no means an admirable role.

The consistent hostility of organized labor to the man of exceptional ability is a simple matter of record. It may be that this was justified in the early days when perhaps the most important issue was to find how to end the exploitation of labor by the entrenched interests, but this justification has long since disappeared, and this attitude of labor toward exceptional ability cannot continue without a deterioration in intellectual climate which might well be decisive.

The popular attitude toward the exceptional man must change in two respects. In the first place, he must be given full opportunity to realize his own potentialities, irrespective of any accident of birth or of economic status. This fact is, I believe, recognized.

The second respect is, however, one in which popular agreement is much less likely but is, I believe, no less essential. The average man should come to feel that if a man, because of exceptional ability, makes five times the average contribution toward society, it is just and fitting that society should allow him five times the average reward. But this is a concession which society in its present mood is firmly determined not to grant. Until it does, I do not see how the man of exceptional ability can help feeling that the attitude of society toward him is churlish and that he is being exploited in the interests of the majority, with the result that his productivity may diminish or even cease.

Let us here and now halt our alarming drift toward the welfare state, and let each of us be content to take from society only in proportion as we give to society. Let organized labor desist from its demand for special privileges for its own mediocrity. Let us learn to prize the exceptional man and give him the reward which his contribution merits. Then, our science and technology will pretty well take care of themselves. For these goods are not to be commanded by frontal attack, but will be seen in their true light as only incidental by the man, whether scientist or humanist, who loves wisdom for its own sake.

The New York Times.

TUESDAY, JULY 15

BROTHERHOOD AIM HELD IMPRACTICAL

Dr. Hook Calls Godlessness
in Part of World a Barrier
to Accord in Atom Age

URGES SCIENTIFIC VIEW

Parley on Humanities Hears
Appeals for Liberal Arts
Role in Technology Era

By JOHN H. FENTON
Special to The New York Times.

AMHERST, Mass., July 14—The task of striking a balance between science and the humanities was under discussion here today by spokesmen of industry and education.

Near the outset a suggestion that only universal brotherhood could save mankind from nuclear annihilation was challenged as impractical so long as godlessness existed.

The plea for universal brotherhood in the atomic age was made by Dr. Frank P. Graham, United Nations representative in India and Pakistan. Dr. Graham was the keynote speaker opening a three-day seminar on the humanities at the University of Massachusetts. He discussed "The Man of Thought, Democratic Society and Science."

The challenge was made by Dr. Sidney Hook, New York University philosopher, in a panel discussion that opened the general discussion program.

Even if there were agreement on an ideal education, said Dr. Hook, "what bearing would it have on the difficulties confronting the United Nations, in view of the intransigence of those who refused to live up to agreements?"

Moreover, Dr. Hook continued, "how can you speak of the brotherhood of man and the fatherhood of God when some of those you are dealing with don't even believe in God?" He suggested that a scientific approach to international relations might be more effective than a religious one.

This problem and several others are expected to be examined before the third annual American Humanities seminar, which ends here Wednesday. About 150 spokesmen for science, industry and education are taking part.

The sessions are under the auspices of the Humanities Center for Liberal Education, with national headquarters on the state university campus. President Eisenhower's Committee on Scientists and Engineers is co-operating.

The seminar was opened at a luncheon in the Student Union by Dr. Francis H. Horn, president of the University of Rhode Island and chairman of the seminar.

There is a "tendency," he said "to exclude the natural and physical sciences from the realm of the liberal arts, but from the time of the Greeks these sciences have been a part of the context of a liberal education."

Thus, "we do ill in the twentieth century to imply that they are not an integral part of liberal arts," said Dr. Horn.

*The
American
Humanities
Seminar
1958*

Dr. Graham, in the keynote speech, asserted that in an age of emphasis on engines, mechanisms and gadgets, "science should become more deeply a part of the humanities in the educational curriculum and less dangerously a part of the barbarities of modern society."

Others taking part in the panel discussion included Dr. Ralph W. Burhoe, executive officer of the American Academy of Arts and Sciences, moderator; Dr. Ambrose Caliver, assistant United States Commissioner of Education; Ruehen Frodin, former executive dean for professional schools, State University of New York; Dr. Edward F. Haskell, chairman of the Council for Unified Research and Education.

Also, Dr. Charles W. Merrifield, associate director of the Joint Council on Economic Education; Dr. Eugene Rabinowitch, editor of the Bulletin of Atomic Scientists; Edmund W. Sinnott, past president of the American Association for the Advancement of Science, and Dr. William Homer Turner, executive director of United States Steel Foundation, Inc.

Theodore F. Koop, director of Washington news and public affairs, Columbia Broadcasting System, spoke tonight on "Science and the Humanities in the Atomic Age."

WEDNESDAY, JULY 16

PHYSICIST SCORES U. S. AID POLICIES

Nobel Winner Says 'False
Position' Emboldens Soviet
and United Arab Republic

By JOHN H. FENTON
Special to The New York Times.

AMHERST, Mass., July 15—The "false position" of United States foreign aid policy has contributed to such situations as the coup in Iraq, Dr. Percy W. Bridgman, 1946 winner of the Nobel Prize for Physics, said today.

In an extension of a prepared speech, he said that the Soviet Union and the United Arab Republic had become bolder and more aggressive in the Middle East because of "bewilderment and lack of confidence" among the American people.

Dr. Bridgman, Professor Emeritus of Physics at Harvard University, addressed a luncheon meeting on the second day of the third annual American Humanities Seminar at the University of Massachusetts.

The sessions are being held here with the cooperation of President Eisenhower's Committee on Scientists and Engineers. They will close tomorrow with a resumé of attempts to define the place of humanists, scientists and technologists in the space age.

Dr. Harold Taylor, president of Sarah Lawrence College, asserted in a dinner address to-night at the Lord Jeffrey Inn that people of the United States had behaved "toward our cultural resources like niggardly parents of an unwanted child."

There is a great need, Dr. Taylor said, for the "full acceptance of the intellectual and the artist by the United States Government."

The educator said that the receptions accorded Marion Anderson, Van Cliburn, the Philadelphia Orchestra and the New York City Ballet abroad had demonstrated the successes in cultural fields that could be achieved by a more coherent cultural or educational policy.

Dr. Bridgman also discussed the place of the pure scientist under pressure created by Russia's early lead in space satellites.

The scientist cannot help feeling that he will "lose something in personal integrity" if he should yield to public clamor to "get busy and turn out pure science so that the United States may stay ahead of Russia," Dr. Bridgman said.

In foreign aid, the United States policy has too often been dictated by our idea of what other nations wanted rather than by what they needed, he asserted.

We should have been "honest enough to say out loud that the primary reason was our fear by Russia," he said.

About 150 industrialists, educators and scientists of various disciplines are attending the seminar. Panel sessions during the day were devoted to discussions of gaps between the knowledge of specialists and that of citizens and of the images of scientists, technologists and humanists as they saw themselves.

THURSDAY, JULY 17

WIDENING OF I. G. Y. ASKED BY SHAPLEY

Astronomer Urges Adaption
of Idea in Medical and
Cultural Cooperation

By JOHN H. FENTON
Special to The New York Times.

AMHERST, Mass., July 16—An extension of the pattern of the International Geophysical Year into medical, cultural and wider scientific exchanges was proposed here today.

Dr. Harlow Shapley, Harvard University astronomer, made the proposal at the closing session of the third annual American Humanities Seminar.

It would "cost us less in one year than one futile battleship to offset the military diplomacy which has brought the nuclear world near the explosion point," Dr. Shapley told an audience of about 150 at the University of Massachusetts.

Later, the proposal was adopted by the conferees as part of a general statement of the objectives covered by the seminar. A copy is to be sent to President Eisenhower.

Other phases covered by the statement included a plea for more support of the arts, scientific research in education, a renewal of educational opportunity for each individual—fast and slow learners alike; education of the public to awareness of a shared concern of scientists and humanists and a reduction of the lag between the specialized and common knowledge as they relate to experts and the general public.

Space Age Discussion

For three days, educators, industrialists and scientists of various disciplines have been discussing the space age relationships between humanists and natural scientists in a series of panel sessions and speeches. President Eisenhower's committee on Scientists and Engineers has been co-operating.

In an invited critique of the sessions Dr. George Boas of Johns Hopkins University asserted that "our most pressing problem is an estimate of our own society and its conduct, regardless of what the Russians, the Chinese, the satellite nations or the South Africans may be up to."

"The free world must defend itself," said Dr. Boas, "but first we had better find out what we are defending and not turn into Russians to show them that we are as good as they are."

Political Motives Cited

Neither science, the humanities nor other disciplines can amount to anything worth preserving, Dr. Boas went on, "if all our energies are to be channeled and controlled by political considerations." He suggested that scholars, acting as it war was the normal state of things, may "have been flattered out of our true role by the seduction of government contracts."

Dr. Shapley said that sixty-six nations were "peacefully and ambitiously" working together in the I. G. Y. Musicians and cardiologists also are learning international cooperation, he said. The I. G. Y. began an eighteen-month program a year ago for cooperative study of the earth and its atmosphere.

The Washington Post

MONDAY AUGUST 11, 1958

'Think' Sessions Need Permanence

By Malvina Lindsay

THINKERS as well as statesmen are busy these days "going to the summit." On many college campuses mankind's dilemmas are being pondered and discussed by academicians and by laymen from all walks of life.

These seminars, conferences, institutes are sponsored by universities, organizations, committees, sometimes with the aid of big business, or big labor. Many industries and many labor unions now have their own cultural attaches, and these are familiar figures on the brain conference circuit.



Miss Lindsay

A conference may be devoted to a clearer understanding of Soviet affairs, as a recent one at the University of Michigan, or to the impact of science on American life, as have been several co-sponsored by the President's Committee on Scientists and Engineers. It may deal with freedom of information and communication, as will many of a series soon to begin at the University of Missouri. It may be concerned—and nearly all such conferences basically are—with the preservation of civilization.

TO MANY citizens the knowledge that brains are being mobilized so widely on the great problems of the day is reassuring. Others ask in effect, so what? They see no concrete results from discussions; doubt if resolutions passed at such gatherings will ever be read by men of action in key places.

Yet veterans of these think sessions testify to their values, one being that they help break down the isolationism in ideas that develops in a country of specialists who tend to herd together. Another value is that they stimulate and enrich the minds of many persons of influence, and put into currency new ideas that often lead to action.

One significance of this trend to raise the town meeting to an academic level is that it is a step toward greater use of the country's intellectual resources in meeting national problems. In resolutions adopted at the recent American Humanities Seminar at the University of Massachusetts, it was stated that "America must place her chief reliance in foreign policy on something more than military power and conventional diplomacy," that her "vast cultural and intellectual resources" should be used more effectively for "preserving the freedom of our citizens and our leadership in a free world."

A direct tangible and official way of doing this has been proposed by Sen. Henry M. Jackson of Washington. It is an "Academy of National Policy" to focus the Nation's best minds on "the central problems of the nuclear age."

SPEAKING last June at graduation exercises of the Industrial College of the Armed Forces, Senator Jackson said that "what seems to be missing is a mechanism to put our best talents to work on the burning issues of national policy."

Much has been done to mobilize scientific brains for national use, but the humanities and the social sciences have little or no channel into government. Yet, "the most serious issues we now face," said Senator Jackson, "lie in the realm of science of human behavior."

Government officials and members of Congress are so occupied with daily tasks they cannot do what Senator Jackson called "hard and sustained thinking" about long-range problems and policies. Groups of distinguished consultants, like the Galther Committee, limit their thinking to special functions or areas.

In his proposed Academy of National Policy, Senator Jackson visualizes a rotating group of leaders in the sciences, social sciences and the humanities spending a year or two in Washington to apply their thought to national and international problems, without the pressure and distraction of day-to-day duties, and to prepare confidential reports for use of the Government.

"In these terrific days we dare not marshal our brain power only half-way," declared Senator Jackson. Certainly steps of some kind need to be taken to give more permanence—and more channel into government—to the thinking on "central problems of the nuclear age" now widely under way on university campuses and elsewhere.

The Humanities Center for Liberal Education
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Dear Mr. Dulles:

It was with regret that we noted last year your inability to attend the 1958 American Humanities Seminar.

But it is with pleasure that President Mather and I extend you an invitation to participate in our 1959 discussions. Your presence will help assure the type of discussion that American Humanities Seminars have as their aim to provoke.

The enclosed announcement provides full information on theme, time, place. This year's Seminar, like past ones, is planned essentially around small group discussions.

Enclosed are a few reprints of addresses at previous seminars that have been published in substantial journals, with one or two other items of interest.

Also enclosed is a reply form. Your returning it by June 12 would be thoroughly appreciated.

Sincerely yours,

Maxwell H. Goldberg
 Maxwell H. Goldberg

MHG:mpe
 Enclosures



STAT

A REPORT ON THE THIRD ANNUAL

AMERICAN HUMANITIES SEMINAR

HELD JULY 14-16, 1958

UNIVERSITY OF MASSACHUSETTS AND THE LORD JEFFERY INN, AMHERST, MASS.

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American Humanities Seminar

By Lee E. Holt

JULY 14-16, 1958

The University for the third consecutive year was host to a conference which this year achieved international recognition. Covered by important American newspapers (including the New York Times and the Christian Science Monitor) and reported abroad by the United States Information Agency, the Humanities Seminar was one of America's most significant intellectual events of the current year. Of particular interest to alumni is the fact that four distinguished University graduates actively participated in the work of the Seminar. These included: Charles Mason Powell '27, President, The American Agricultural Chemical Company; Dr. Austin W. Fisher '37, Manager, Business Development, Research and Development Division, Arthur D. Little, Inc.; Elliott H. Newcomb '37, Executive Assistant to the President, Dictaphone Corporation; and Rudolf Mathias '43, Chief Psychologist, Wisconsin Diagnostic Center. Executive Director of the Humanities Center for Liberal Education, sponsor of the annual meeting, is Maxwell H. Goldberg '28.



Some of America's most powerful thinkers met at the University in mid-July to discuss the possibility of winning more understanding from the American public for the vitally necessary work of our scientists, technologists and humanists in the satellite age. This was the key topic of the Third Annual American Humanities Seminar held July 14-16 under the sponsorship of the Humanities Center for Liberal Education and the University of Massachusetts, and with the co-operation of President Eisenhower's Committee on Scientists and Engineers.

"Cycle of Faith and Hope"

After a moving address delivered by Frank Porter Graham, U.N. representative in India and Pakistan, which called for the replacement of "the vicious cycle of fear and armaments with a cycle of faith and hope," the seminar, made up of over a hundred leaders of American science, industry, labor, education, and government, went vigorously to work in a series of nine round-table discussions in which everyone took part. Participants attacked such problems as the lag between the frontiers of knowledge and the life of the ordinary citizen; the false images which people have of professional men in our society; and the kind of citizens this country will need in the future.



"Scientific Revolution"

In an opening panel discussion, the Editor of *The Bulletin of Atomic Scientists*, Eugene Rabinowitch, stated the case for science. He pointed out that in the past the ideas which formed society came chiefly from religion and philosophy; now they come chiefly from science and research. The world has not yet adjusted itself to this "scientific revolution." "We must give our children an education in science," he said, "which will permit America to keep the leadership in the scientific and technological advancement of the world and, at the same time, will strengthen and maintain our dedication to human freedoms."

Edmund W. Sinnott, Past President of the American Association for the Advancement of Science, reminded the seminar that genetically speaking man is only one generation removed from barbarism. For this reason, the civilizing effect of education is crucial.

Sidney Hook, Professor of Philosophy at New York University, urged that the world make more use of the scientific method in settling international disputes; and Fred M. Hechinger, formerly educational editor for the *New York Herald Tribune*, declared that the scientific method is not being used at all in international affairs. Scientists and humanists together should provide the leadership for our country; they cannot any longer afford to stand aside.

Benjamin Fine, formerly educational editor for the *New York Times*, also urged that America give more support to education. He called for immediate passage of a five-million-dollar federal aid to education bill; tripling of teachers' salaries; redefinition of educational goals; and greater emphasis on the education of gifted children.

Keep Informed!

As a diversion from its labors, the seminar spent an evening as guests of Headmaster Frank Boyden of Deerfield Academy. After a tour of Old Deerfield they were treated to a banquet dinner at the academy. Here Henry W. Sams, Na-

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tional President of the College English Association, brought greetings from C.E.A.; A. M. Sullivan, poet and Editor of *Dun's Review*, brought greetings from the Advisory Council of the Humanities Center; and Theodore F. Koop, Director of Washington News and Public Affairs, C.B.S., addressed the seminar on the role of the government, the schools, and the media of mass communication in informing the public about science. He urged "the individual, thoughtful leaders" of the community "to encourage the schools and the press and to help the government in the determination of science's proper role in our democracy."

Communication: The Crucial Problem

A crucial problem for modern man, one round table learned from psychologist Rudolf Mathias '43, of the Wisconsin Diagnostic Center, is how to integrate the difficult new knowledge professional people are discovering into man's established boundaries of reality. The summit of knowledge on which he now stands frightens modern man; he is lonely and afraid. Educators must help him form a strong self-image so that he will not be overwhelmed.

But the problem of communication between the specialists and the non-specialists becomes daily more acute, the discussion groups decided. How can the citizen be given knowledge about frontiers which imperil him — for instance, the atom bomb — unless he has enough basic education to grasp this knowledge? And if he doesn't, how can he make political decisions?

Some members of the seminar were pessimistic: eighty percent of the people, it was suggested, will never understand what professional men are doing. The selfish, self-satisfied, sentimental aims of our citizenry, the softness of a "welfare state" in which mediocrity is gradually taking over, make this impossible.

Others were optimistic. Recent experiments with adult liberal arts education in the labor unions, for example, show that genuine understanding can be transmitted. The sixty million Americans who have never been through high school can be reached, if professional people will discard their "take it or leave it" attitude and try to do the job.

A "Sell Education" Campaign?

The unflattering images many Americans have of professional people — both scientists and humanists — were seen as a definite bar to understanding. In part, these images are a hangover from the frontier tradition of anti-intellectualism; in part, they are the deserved result of the aloofness of intellectuals from the mainstream of American life. If the Ameri-



L. to r.: Dr. Maxwell H. Goldberg '28, Executive Director of the Humanities Center for Liberal Education, founder and guiding spirit of the Seminars; Dixon Donnelly, staff member of President Eisenhower's Committee on Scientists and Engineers; and Dr. J. Paul Mather, President of the University. Other members of the University staff who worked with Dr. Goldberg in planning this year's Seminar: Sidney Kaplan, Seminar Co-ordinator; Anthony Zaitz, Radio and TV; Albert Madeira, Bursar; William Deminoff '52, Public Information; Raymond Wyman '37 and Nathan S. Tilley, Audio-Visual. Important services were also rendered by Robert Leavitt '50, Executive Director, The Associate Alumni, and by Gilbert Mottla, Department of Communications, College of Agriculture.

can people are to be persuaded to support a life of learning befitting our place in world affairs, these images must be changed.

Some were anxious to take immediate and forceful action in this crucial matter, arguing that there is no time to waste. Americans must be persuaded that education can no longer be treated on a "least we can get away with" basis; they must be shown that it is more than "enrollment figures, diplomas, and buildings." A suggested method for effecting this change was to "put our goods in the window," that is, make use of the devices of professional molders of opinion and advertisers, using also every other means at our disposal to create a favorable image in the public eye.

Others, while agreeing that something must be done, asserted that the best results are achieved on a personal basis. Every time an ordinary citizen gets to know an intellectual who

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First picture: (l. to r.) Cyril Stanley Smith, Institute of Metals, University of Chicago; Edmund W. Sinnott, Yale University, Past President of American Association for Advancement of Science. Second picture: (l. to r.) Reuben Frodin, former Executive Dean of Professional Schools, State University of New York, speaking to a discussion group. Third picture: Sidney Hook, Chairman, Department of Philosophy, New York University, in informal talk with Henry T. Yost, Jr., Department of Biology, Amherst College.



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has friendly human qualities, a change occurs in one man's stereotype. In spite of superficial evidences to the contrary, Americans still have a deep-rooted respect for things of the mind.

Two Different Views

Striking two different notes on these matters were key speakers Percy W. Bridgman, Harvard physicist, and President Harold Taylor of Sarah Lawrence College. Professor Bridgman (winner of a Nobel Prize in 1946) asserted that our society has not been growing in stature as it should have been in time of crisis. We have been "diverted into a passionate defense of our own particular democratic institutions," he said, when we should have been trying to rise above the mediocrity that plagues a "welfare state." He called openly for revolt, saying that "our society has been stable too long." We must frankly admit, he said, that exceptional talent deserves exceptional reward and recognizes the basic social rule of "value given for value received." If the exceptional man is given the status and reward which his contribution to society merits, science and technology "will pretty much take care of themselves."

This call for an aristocracy of brains was countered by the more traditionally American wisdom of President Taylor who saw great hope in the rise of mass culture in America. "Every boy and girl capable of it," he said, "must have an opportunity to become an intellectual, to have an inner life of his own." We may look forward to a time when the interests of our most advanced intellectuals may be shared by everyone." "By putting more of our young people and the adult population

into the stream of mass culture," he asserted, "we do not debase standards; we create new possibilities for the development of higher standards."

President Taylor issued a warning, though, to those who would advance the cause of education by opinion-making efforts. The way to affect others is to think freshly and well oneself; the educator must "stand before the community as the intellectual leader of his time," and must cease being "a lobbyist for the intellect." He urged, nevertheless, that the intellectuals of America add their voices to those already calling for improvements in education.

International Cooperation

Taking a whimsical look into the future, Harlow Shapley, Harvard astronomer, predicted at the seminar's concluding meeting that man's worst enemy — man himself — must find some object outside himself to vent his belligerence upon if he is not to destroy the world. He urged that international cooperation like that of the geophysical year be established to allow all mankind to work together on the problems that face us all — disease, hunger, the tyranny of the unknown. George Boas of Johns Hopkins called on America to "be a civilization, not a routine."

The seminar ended with a brief parliamentary session in which it was voted to pass and forward to President Eisenhower a series of resolutions urging that in this period of international stress and crisis the United States should devote more of its energy and wealth to advancing the cause of education, the arts, scientific research, and cultural cooperation among the nations of the earth.

Harlow Shapley, Harvard astronomer, speaking at final session of Seminar. In assessing man's chances of survival, Dr. Shapley half-whimsically asserted that there was no way "of clearing the earth of Homo Sapiens through misbehavior of stars, sun, or of earth. . . . I'm glad to report that it looks pretty safe on this planet for ingenious man — except for one horrible factor. He has a deadly enemy at his throat. One that may succeed in returning the planet to the clams, kelp, and cockroaches. That enemy is, of course, himself. Man's worst foe is man. You all know how with man-made bomb concussions, with radiations and poisons, the enemy can carry out the enterprise. Poor Homo! It is just too bad to do him in. He is such a nice animal, so kind of heart at times, so cute, so remarkably put together, with his opposable thumbs that created art, and roving eyes that provided posterity, his sweet vocal cords, his powerful forebrain. Too bad, for he is so well equipped to appreciate the universe — its beauty and its cosmic songs."



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